

Remarks:

Reconsideration of the application is requested.

Claims 1-23 remain in the application. Claims 1, 4-6, and 14 have been amended.

In item 4 of the Office action, the Examiner requested an affirmation of the election, with traverse, of Group I containing claims 1-23. This election is hereby affirmed.

In item 5 of the Office action, the Examiner objected to the drawings for including reference number "III" in Fig. 2, but not describing that part in the specification. The specification has been amended to explain that the section of Fig. 2 that is labeled "III" is the portion that is enlarged and shown in Fig. 3.

In item 7 of the above-identified Office action, the Examiner has rejected claims 1-23 as being indefinite under 35 U.S.C. § 112, second paragraph.

More specifically, the Examiner has stated in item 8 that claim 1 was unclear what was "at a given frequency". Claim 1 has been amended to clarify that the switch was switching at a given frequency. Support for these changes may be found on

page 23, lines 15-25, of the Specification of the instant application.

In item 9 of the Office action, the Examiner rejected the term "a few" in claim 4 as being indefinite. A common understanding of the term "a few" is "at least three". When read with this meaning, claim 4 is definite.

In item 10 of the Office action, the Examiner rejected claims 4-6 as being indefinite for explaining what frequency was being controlled. Claims 4-6 have been amended to clarify that the switching frequency of the switch was being adjusted to control the outgoing flux.

Accordingly, the specification and the claims meet the requirements of 35 U.S.C. § 112, first and second paragraphs. Should the Examiner find any further objectionable items, counsel would appreciate a telephone call during which the matter may be resolved. The changes are neither provided for overcoming the prior art nor do they narrow the scope of the claim for any reason related to the statutory requirements for a patent.

In item 12 of the Office action, the Examiner rejected claims 1-12, 14-16, and 18-22 as being obvious over Harvey (GB 1 477 754 A) in light of Welch (U.S. 4,209,552) under

35 U.S.C. § 103(a). As will be explained below, the claims were patentable over the cited art in their original form and the claims have, therefore, not been amended to overcome the references.

Before discussing the prior art in detail, a brief review of the invention as claimed is provided. Amended claim 1 calls for, *inter alia*, a method of cleaning a surface of an article having a metallic base body including the following steps:

generating a plasma with electrically positively charged ions, accelerating the ions towards the article, and bringing ions into contact with the base body for cleaning the base body;

directing an electron beam onto the base body; and

controlling an outgoing flow of electrons coming into contact with the base body by connecting the base body to a reference potential via a switch at a given switching frequency.

On page 6 of the Office action, the Examiner argued that Matthews teaches an alternation of the potential of the substrate (see Matthews, page 8, paragraph 3, through page 9, paragraph 1). The alternation of the potential of the substrate by Matthews is used while growing the film (page 9, line 2) in order control the coating structure. Therefore, the alternation of the potential of the substrate is used during a growth/heating process. See especially claim 14.

According to the invention as claim, alternation of the potential of the substrate is used during a heating/cleaning process. A process of growing a film is not performed at this stage. After finishing cleaning, the substrate is heated to a coating temperature (*see especially claim 22*).

Accordingly, none of the references, whether taken alone or in any combination, either show or suggest the features of claim 1. Therefore, claim 1 is patentable over the art. Moreover, because all of the dependent claims are ultimately dependent on claim 1, they are believed to be patentable as well.

Claims 4-6 are patentable over Harvey in view of Matthews. Harvey teaches a frequency of about one or two times per minute, that translates to a frequency of 1/30 Hz ($2 \text{ cycles} / 1 \text{ minute} = 2 \text{ cycles} / 60 \text{ s} = 1/30 \text{ Hz}$).

Claim 4 describes a frequency of a few Hertz: i.e. at least 3 Hz; claim 5 describes 50 Hz, claim 6 describes 27 Hz. The frequency as claimed in the invention of the instant application is, therefore, approximately 100 times higher than a frequency taught by Harvey. This significant difference in the frequency is more than a mere obvious optimization of prior-art systems.

In view of the foregoing, reconsideration and allowance of claims 1-23 are solicited. In the event the Examiner should still find any of the claims to be unpatentable, please telephone counsel so that patentable language can be substituted.

Enclosed find a payment for \$42 to provide for an independent claim in excess of three.

Please charge any other fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,


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Version with Markings to Show Changes:In the Specification:

Replace the paragraph beginning at page 18, line 15, with the following:

--Fig. 3 is a partial sectional view of a thermal barrier coating system of the turbine blade of Fig. 2, the section is labeled III; and--

In the Claims:

Claim 1 (amended). A method of cleaning a surface of an article having a metallic base body, the method which comprises:

generating a plasma with electrically positively charged ions, accelerating the ions towards the article, and bringing ions into contact with the base body for cleaning the base body;

directing an electron beam onto the base body; and

controlling an outgoing flow of electrons coming into contact with the base body by connecting the base body to a reference potential via a switch at a given switching frequency.

Claim 4 (amended). [The] A method [according to claim 1,] of cleaning a surface of an article having a metallic base body, the method which comprises:

generating a plasma with electrically positively charged ions, accelerating the ions towards the article, and bringing ions into contact with the base body for cleaning the base body;

directing an electron beam onto the base body;

controlling an outgoing flow of electrons [at a] coming into contact with the base body by connecting the base body to a reference potential via a switch at a given switching frequency by adjusting the switching frequency in a range from a few Hz to a few MHz.

Claim 5 (amended). [The] A method [according to claim 1,] of cleaning a surface of an article having a metallic base body, the method which comprises:

generating a plasma with electrically positively charged ions, accelerating the ions towards the article, and bringing ions into contact with the base body for cleaning the base body;

directing an electron beam onto the base body; and

controlling an outgoing flux of electrons [at a] by adjusting the switching frequency [of] to substantially 50 kHz.

Claim 6 (amended). The method according to claim 1, which comprises controlling an outgoing flux of electrons [at a] coming into contact with the base body by connecting the base body to a reference potential via a switch at a given switching frequency by adjusting the switching frequency [of] to substantially 27 MHz.

Claim 14 (amended). [The] A method [according to claim 1,] of cleaning a surface of an article having a metallic base body, the method which comprises:

generating a plasma with electrically positively charged ions, accelerating the ions towards the article, and bringing ions into contact with the base body for cleaning the base body;

directing an electron beam onto the base body; and

controlling an outgoing flow of electrons coming into contact with the base body by connecting the base body to a reference potential via a switch at a given switching frequency; and

heating the article prior to cleaning.